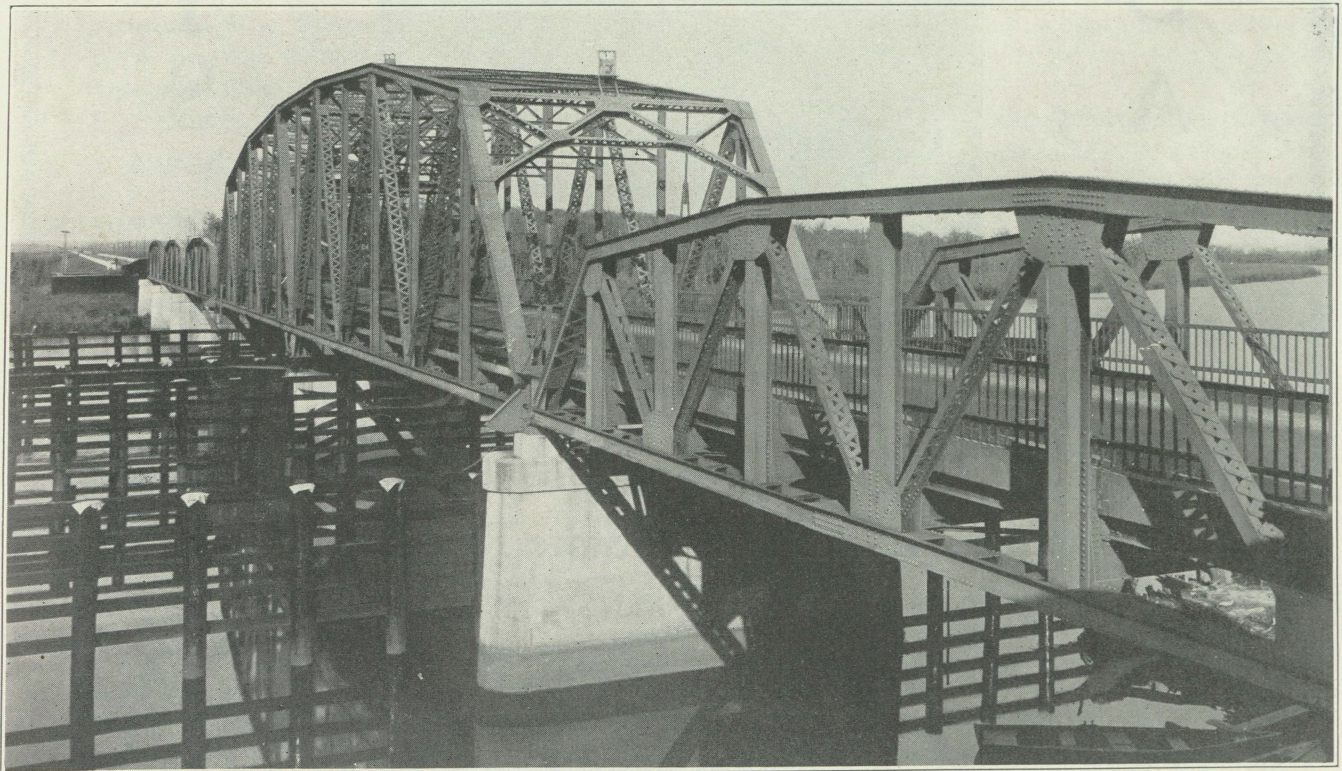


FLORIDA HIGHWAYS

Official Bulletin of the State Road Department

Vol. IX

No. 5

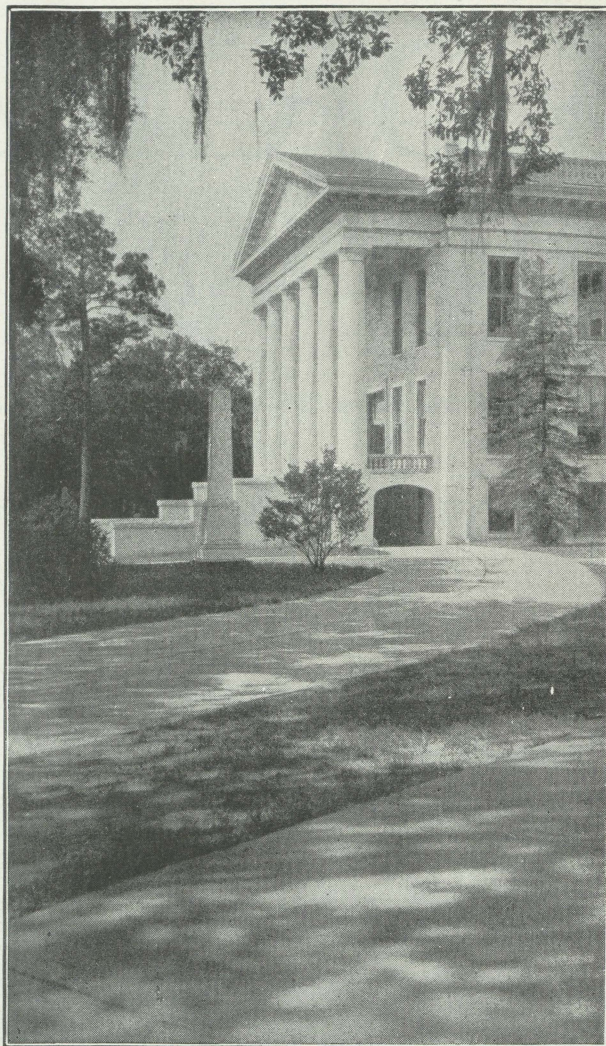


Federal Aid, Road 1, Escambia Bay Bridge

May 1932

FLORIDA

Vol. IX
No. 5



HIGHWAYS

MAY
1932

Transactions at Meeting of State Road Department Held at Tallahassee, May 17, 1932

PURSUANT to due and legal notice, a meeting of the State Road Department was held at Tallahassee, May 17, 1932, with all members present, as follows: H. H. Wells, Chairman, Addison Logan, Wm. A. Shands, J. E. Lupfer, George B. Hills, B. M. Duncan, State Highway Engineer, H. J. Morrison, Federal Highway Engineer, and B. A. Meginniss, Attorney for the Department, were also in attendance.

William Howard Taft Memorial Highway

Messrs. Peter J. Van Geyt and C. H. Jewett requested the Department to present to the proper Federal authorities a request that the William Howard Taft Memorial Highway be extended from its present southern terminus through Florida to Fort Myers along the following route: Road 11 from Georgia line via Monticello to Capps; Road 19 from Capps to Chiefland; Road 81 from Chiefland to Lebanon; Road 81A from Lebanon to Road 15; Road 15 from Road 81 to Palm Harbor; Road 228 from Palm Harbor to Tampanshores; Road 17 from Tampanshores to Tampa; Road 23 from Tampa to Palmetto; and Road 5 from Palmetto to Fort Myers.

Road 140—Broward County

Messrs. J. R. Barnes and B. W. Strickland presented to the Department a request that in the construction of Road 140 in Broward County the Department use its endeavors to have the contractor employ Broward County labor so far as possible.

Minutes Approved

On motion of Mr. Shands, seconded by Mr. Lupfer, the minutes of the meeting held at Tallahassee April 6th were duly approved.

Expense Accounts Approved

On motion of Mr. Wells, seconded by Mr. Shands, the expense accounts of the members were approved and ordered paid.

Chairman's Report

The Chairman submitted his usual monthly report, bringing the financial information of the Department to the members down to date. He outlined the work which has been done and is being done on the budget and the present state of its finances. He declared that the Department is in better condition



Florida Highways

Published Monthly
Official Bulletin of the State Road Department

PERSONNEL OF DEPARTMENT

H. H. WELLS (*Chipley*), *Chairman*
(*Official Residence, Tallahassee.*)

ADDISON LOGAN, <i>Tampa</i>	}	<i>Members</i>
W. A. SHANDS, <i>Gainesville</i>		
GEORGE B. HILLS, <i>Jacksonville</i>		
J. E. LUPFER, <i>Kissimmee</i>		
KARL ROESCH, <i>Tallahassee, Secretary</i>		

PERSONNEL OF EMPLOYEES IN GENERAL CHARGE OF THE WORK OF THE DEPARTMENT

Engineering Division

B. M. Duncan, Tallahassee.....State Highway Engineer
L. K. Cannon, Tallahassee.....Ass't. State Highway Engineer
W. I. Nolen, Tallahassee.....Bridge Engineer
W. L. Thorpe, Gainesville.....Supt. of Equipment

Division Engineers

DIVISION OF TESTS.....H. C. Weathers, Gainesville
DIVISION OF SURVEYS AND PLANS.....F. W. Berry, Jr.,
Tallahassee
FIRST DIVISION.....R. K. Van Camp, Lakeland
Counties—Charlotte, Citrus, Collier, DeSoto, Glades, Hardee, Hendry, Hernando, Highlands, Hillsborough, Lake, Lee, Manatee, Pasco, Pinellas, Polk, Sarasota, Sumter.
SECOND DIVISION.....Leon B. Thrasher, Ocala
Counties—Alachua, Baker, Bradford, Columbia, Dixie, Gilchrist, Hamilton, Jefferson, LaFayette, Levy, Madison, Marion, Suwannee, Taylor, Union.
THIRD DIVISION.....E. K. Fogg, Chipley
Counties—Bay, Calhoun, Escambia, Franklin, Gadsden, Gulf, Holmes, Jackson, Leon, Liberty, Okaloosa, Santa Rosa, Wakulla, Walton, Washington.
NORTH FOURTH DIVISION.....M. P. Philips, Jacksonville
Counties—Clay, Duval, Flagler, Nassau, Putnam, Seminole, St. Johns, Volusia.
SOUTH FOURTH DIVISION, R. L. Bow, West Palm Beach
Counties—Brevard, Broward, Dade, Indian River, Martin, Monroe, Okeechobee, Orange, Osceola, Palm Beach, St. Lucie.

Auditing Division

S. L. Walters, Tallahassee.....Auditor

B. A. Meginniss, Attorney for the Department,
Editor

Volume IX May, 1932 Number 5

as to the payment of its bills, etc., than at any time in its history.

Sale of Surplus Parts

On motion of Mr. Hills, seconded by Mr. Lupfer, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to sell for not less than \$200.00 the surplus Model T Ford parts listed by the Secretary to this Department on this date.

Dixie County Time Warrants

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to dispose of the whole or such part of the Dixie County Time Warrants owned by this Department as he may find advantageous, at a price of not lower than 85% of par and accrued interest.

Walton County—Road 152

Dr. L. F. Cawthon and Messrs. Hiltz Crook, D. Stuart Gillis, R. E. L. McCaskill, J. P. Sellers and J. J. Kennedy appeared before the Department and requested that the state provide and maintain a ferry across Choctawhatchee River on State Road 152. They were informed by the Chairman that he has been advised that the Department cannot legally comply with this request.

Project 83—Claim of Powers Construction Company

Mr. Stockton Bryan presented to the Department the claim of Powers Construction Company in connection with the construction of Project 83.

On motion of Mr. Hills, seconded by Mr. Logan, the following resolution was adopted:

BE IT RESOLVED, that the claim of Powers Construction Company in connection with the construction of Project 83, Road 5, Sarasota County, be and the same is hereby referred to the Chairman, Engineer and Attorney for the Department, with power to act.

Federal Aid For Gulf Coast Highway

Messrs. W. T. Edwards, G. P. Wood and George B. Perkins presented to the members a request that they take up with the Federal authorities the matter of granting an extension of Federal Aid to be applied on the Gulf Coast Highway. They called attention to Memorial (Senate 18—1929) adopted by the Legislature requesting such Federal Aid for the Gulf Coast Highway. Mr. Wood suggested that the same be made applicable to Roads 10 and 15 in Franklin and Wakulla counties and specifically from Tallahassee west on Road 10 as far as the same may extend.

Claim of M. G. Lewis & Son, Port St. Joe

Mr. T. C. Ray representing M. G. Lewis & Son again presented to the Department the claim of said firm for damages alleged to have been sustained as a result of blasting operations by the Department at Port St. Joe. He was advised that this matter is being investigated by the Department.

Emergency Landing Field

The Chairman presented a letter from the Apalachicola Chamber of Commerce offering a tract of land for an emergency landing field two and a half miles from the City of Apalachicola. No action was taken but the Chairman was requested to advise this body that it is not in a position to accept the offer.

Budget

The Auditor submitted to the members a statement showing expenditures of delayed bills on projects on which records were closed as of December 31, 1931, or miscellaneous engineering expenses on projects not set up in the active budget for the year 1932, and requested the addition of the sum of \$100,845.82 to take care of such expenditures.

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that there be and there is hereby made available a budget allowance of \$100,845.82 to take care of those items represented by delayed bills on projects on which records were closed as of December 31, 1931, or covering miscellaneous engineering expenses on projects not set up in the active budget for the year 1932.

Project 948—Road 22—Right-of-Way

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted:

WHEREAS, this Department has surveyed and located State Road 22 between Orlando and the Lake County line, as is shown by plat of said location on file in this office and on file in the office of the Clerk of the Circuit Court of Orange County, a copy of which is hereto attached and marked Exhibit A; and

WHEREAS, said Department has found and determined and does hereby find and determine that it is necessary, wise and expedient to secure by purchase or condemnation the lands necessary for the right of way as shown by said plat,

NOW, THEREFORE, BE IT RESOLVED, by the State Road Department of the State of Florida that the County Commissioners of Orange County, Florida, be and they are hereby requested and authorized to secure by purchase or condemnation the lands

necessary for said right of way for said road along the lines shown on said plat.

BE IT FURTHER RESOLVED, that said County Commissioners be and they are hereby authorized to use the name of this Department in any condemnation proceedings necessary to carry out the purposes of this resolution, or to proceed in their own name as authorized by law.

BE IT FURTHER RESOLVED, that in the event that they shall elect to proceed in the name of this Department, that their attorney be and he is hereby authorized to prepare, execute and file all necessary pleadings, affidavits and documents in connection therewith.

Project 957—Road 44—Right-of-Way

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted

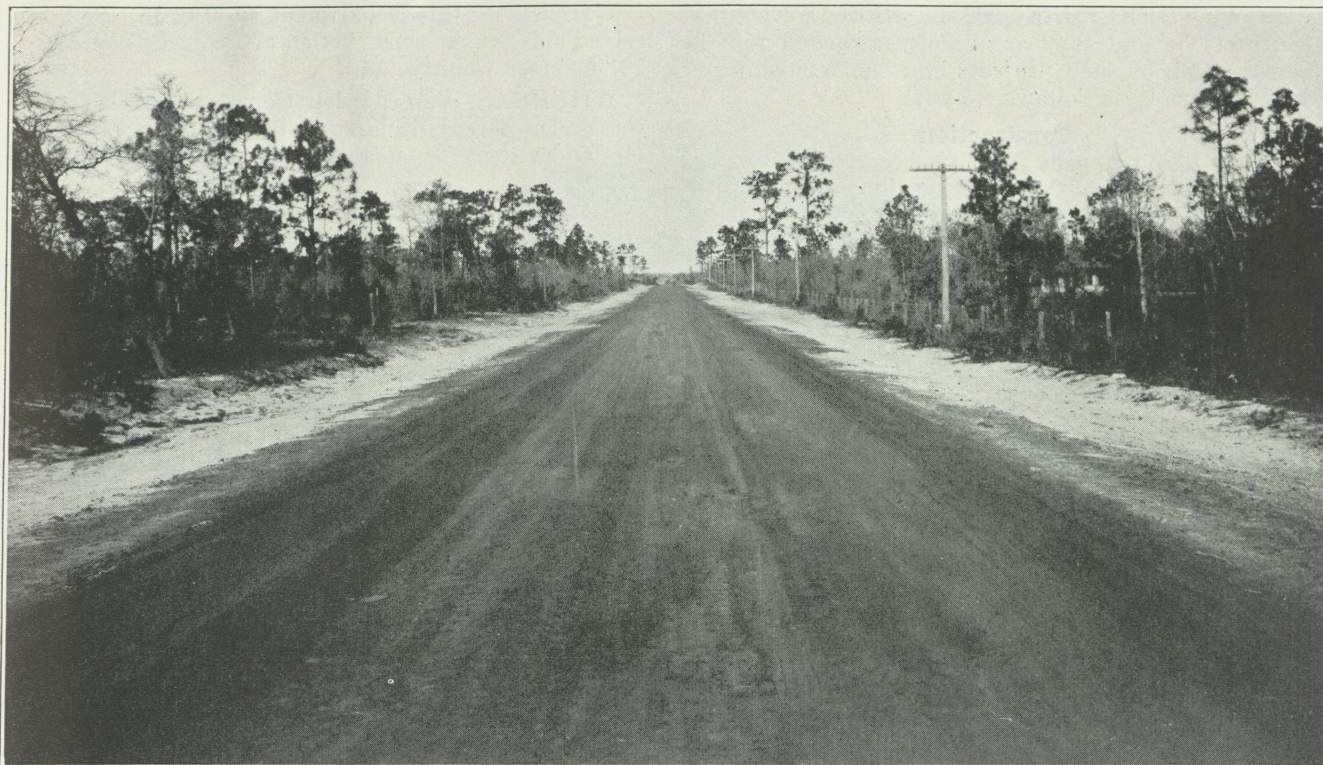
WHEREAS, this Department has surveyed and located State Road 44 between Mims and the Volusia County Line, as is shown by plat of said location on file in this office and on file in the office of the Clerk of the Circuit Court of Brevard County, a copy of which is hereto attached and marked Exhibit A; and

WHEREAS, said Department has found and determined and does hereby find and determine that it is necessary, wise and expedient to secure by purchase or condemnation the lands necessary for the right of way as shown by said plat.

NOW, THEREFORE, BE IT RESOLVED, by the State Road Department of the State of Florida, that the County Commissioners of Brevard County, Florida, be and they are hereby requested and authorized to secure by purchase or condemnation the lands necessary for said right of way for said road along the lines shown on said plat.



Road 5, Rock Base Slag Surface Treated



Road 10, Sand Asphalt Base and Surface Course

BE IT FURTHER RESOLVED, that said County Commissioners be and they are hereby authorized to use the name of this Department in any condemnation proceedings necessary to carry out the purposes of this resolution, or to proceed in their own name as authorized by law.

BE IT FURTHER RESOLVED, that in the event that they shall elect to proceed in the name of this Department, that their attorney be and he is hereby authorized to prepare, execute and file all necessary pleadings, affidavits and documents in connection therewith.

Project 761—Road 2—Right-of-Way

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted:

WHEREAS, this Department has surveyed and located State Road 2 between Haines City in Polk County and a junction with present Road 2 in Osceola County, as is shown by plat of said location on file in this office and on file in the offices of the Clerks of the Circuit Court of Polk County and Osceola County, a copy of which is hereto attached and marked Exhibit A; and

WHEREAS, said Department has found and determined and does hereby find and determine that it is necessary, wise and expedient to secure by purchase or condemnation the lands necessary for the right of way as shown by said plat.

NOW, THEREFORE, BE IT RESOLVED, by the State Road Department of the State of Florida that the County Commissioners of Polk County, Florida be and they are hereby requested and authorized to secure by purchase or condemnation the lands in Polk County necessary for said right of way for said road along the lines shown on said plat; and that the County Commissioners of Osceola County, Florida be and they are hereby requested and authorized

to secure by purchase or condemnation the lands in Osceola County necessary for said right of way for said road along the lines shown on said plat.

BE IT FURTHER RESOLVED, that said County Commissioners be and they are hereby authorized to use the name of this Department in any condemnation proceedings necessary to carry out the purposes of this resolution, or to proceed in their own name as authorized by law.

BE IT FURTHER RESOLVED, that in the event that they shall elect to proceed in the name of this Department, that their attorney be and he is hereby authorized to prepare, execute and file all necessary pleadings, affidavits and documents in connection therewith.

On motion of Mr. Shands, seconded by Mr. Lupfer the Department was adjourned until two-thirty.

AFTERNOON SESSION—2:30 O'CLOCK

Present as at morning session.

Road 5-A—Taylor County

On motion of Mr. Shands, seconded by Mr. Logan, the following resolution was adopted:

BE IT RESOLVED, that the engineers be and they are hereby authorized to expend approximately \$6,000 for the widening of shoulders on State Road 5-A from the LaFayette County line to Perry.

Award of Contracts

On motion of Mr. Lupfer, seconded by Mr. Hills, the following resolution was adopted:

WHEREAS, this Department on May 16, 1932 received bids for the construction of certain projects and for the furnishing of certain materials and supplies; and

WHEREAS, the firms and individuals hereinafter listed were and are hereby declared to be the lowest responsible bidders therefor,

NOW, THEREFORE, BE IT RESOLVED, that contracts be and they are hereby awarded for the construction of such projects and the furnishing of such materials as follows, to-wit:

Construction

Proj. 870, Road 143, Palm Beach County, Coastal Roads Company, using Brooksville Stone	\$ 23,953.00
Proj. 3-A-1, Road 218, Okaloosa County, Britton Lumber Company, subject to approval U. S. Forestry Dept.	2,547.02
Proj. 1002, Road 140, Broward County, Everglades Const. Co., using Miami rock, and local materials for surface treatment	29,496.35
Proj. 785, Road 47, St. Johns County, T. B. Gillespie, Inc.	38,600.00
Proj. 79-B, Road 4, Duval County, Hillyer & Reynolds	17,602.46

Materials

Oil Asphalt—Summer Viscosity	
Proj. 696 F.O.B. Ft. Pierce, Stand. Oil Co. of N. J.	\$1,669.32
Proj. 751 F.O.B. DeFuniak, Standard Oil Co. of La.	1,857.80
Proj. 752 F.O.B. DeFuniak, Standard Oil Co. of La.	1,429.06
Proj. 3-A F.O.B. Crestview Standard Oil Co. of La.	2,798.62
Proj. 634, F.O.B. Cypress, Standard Oil Co. of La.	1,054.43
Proj. 658, F.O.B. Bonifay, Standard Oil Co. of La.	459.32
Proj. 1, F.O.B. Holt, Standard Oil Co. of La.	593.25
Proj. 585, F.O.B. Milton, Standard Oil Co. of La.	704.70
Proj. 514, F.O.B. Cypress, Standard Oil Co. of La.	870.58
Proj. 646, F.O.B. Lanark, Mexican Petroleum Corp.	439.07

Cover Materials

Proj. 696, F.O.B. Ft. Pierce, Fla. Crushed Stone Co.	\$5,002.14
Proj. 751, F.O.B. DeFuniak, Roquemore Grav. Co.	5,522.14
Proj. 752, F.O.B. DeFuniak, Roquemore Gravel Co.	4,247.80
Proj. 3-A, F.O.B. Crestview, Roquemore Grav. Co.	7,563.62
Proj. 634, F.O.B. Cypress, Roquemore Gravel Co.	3,899.92
Proj. 658, F.O.B. Caryville, Woodstock Slag Co.	1,140.19
Proj. 658, F.O.B. Bonifay, Woodstock Slag Co.	1,140.19
Proj. 1, F.O.B. Galliver, Woodstock Slag Co.	2,117.56
Proj. 1, F.O.B. Holt, Woodstock Slag Co.	2,634.27
Proj. 646, F.O.B. Lanark, Woodstock Slag Co.	2,201.25
Proj. 590, F.O.B. Floridale, Birmingham Slag Co.	1,825.92
Proj. 585, F.O.B. Milton, Birmingham Slag Co.	5,278.05
Proj. 514, F.O.B. Sneads, Birmingham Slag Co.	1,075.84
Proj. 514, F.O.B. Cypress, Birmingham Slag Co.	1,079.84
Proj. 514, F.O.B. Grand Ridge, Birmingham Slag Co.	2,151.68
Proj. 634, F.O.B. Marianna Birmingham Slag Co.	1,312.00

Project 711—Road 58—Gadsden County

Oil Asphalt, Atlantic Refining Co.	\$ 4,044.45
Gravel, Round, Florida Gravel Company	8,402.52

Project 696—Road 8—St. Lucie County

Ocala Lime Rock, Naranja Rock Company	32,470.00
TC 1 Prime, Wood Preservative Mfg. Co.	2,027.52

Project 729—Road 15—Pinellas County

Ocala Lime Rock, Florida Lime Rock Sales Corp.	34,380.00
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Project 3-A—Road 218—Okaloosa County

TC 2 Prime, Republic Creosoting Company	2,386.29
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Project 85—Road 3—Award of Contract

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

WHEREAS, on May 16, 1932, this Department received bids for the construction of Project 85, Road 3 in Volusia and Seminole Counties; and

WHEREAS, it appears that Langston Construction Company and Murphy Construction Company are the low bidders therefor, for the sum of \$261,205.28,

NOW, THEREFORE, BE IT RESOLVED, that the matter of the award of said bid be investigated by the Chairman and Highway Engineer with power to make an award subject to approval by the U. S. Bureau of Public Roads.

Project 87-A—Road 19—Award of Contract

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

WHEREAS, this Department on May 16, 1932, received bids for the construction of Project 87-A, Road 19, Jefferson County; and

WHEREAS, Van Gordon Construction Company was and is hereby declared to be the lowest responsible bidder therefor, at and for its bid price of \$145,-326.28,

NOW, THEREFORE, BE IT RESOLVED, that contract be and the same is hereby awarded to said Van Gordon Construction Company, subject to approval of U. S. Bureau Public Roads, at and for its said bid price, and that in the construction thereof concrete pipe and Resiliflex guard rail be selected as the alternates.

Project 87-A—Road 19—Material

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

WHEREAS, this Department has this day awarded a contract for the paving of Project 87-A, Road 19, Jefferson County; and

WHEREAS, the low bid therefor contemplates the use of slag as a cover material; and

WHEREAS, this Department prefers to use Brooksville stone and the successful bidder has indicated a willingness to supply such Brooksville stone without change in its said bid price,

NOW, THEREFORE, BE IT RESOLVED, that the Chairman be and he is hereby authorized and requested to ask the consent of the U. S. Bureau of Public Roads to the use of such Brooksville stone by the said contractor in lieu of slag.

Road 58—Town of Havana

The Chairman presented to the members a resolution adopted by the Town Council of the Town of Havana, requesting that during its operations in that town that the Department surface treat that part of Ninth Avenue between Main Street and Second Street West, at the expense of said town, bill for the work to be rendered to said town upon completion of said work.

On motion of Mr. Wells, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the engineers be authorized to surface treat that portion of Ninth Avenue between Main Street and Second Street West in the town of Havana, said work to be done wholly at the expense of the town and a bill for same to be rendered said town upon completion of said work.

Road 17—Hillsborough County

Armenia Avenue to Memorial Highway

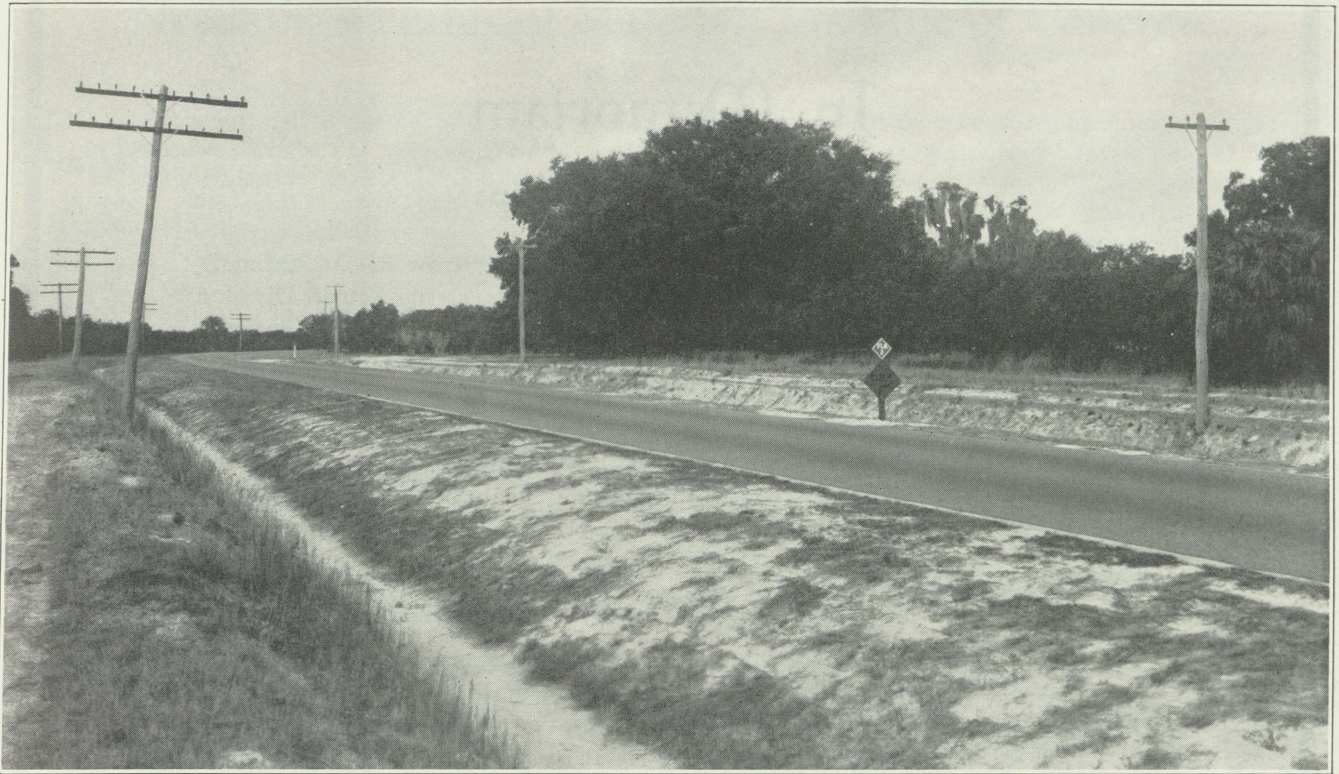
On motion of Mr. Logan, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to advertise for the grading of that section of Road 17 in Hillsborough County from Armenia Avenue to Memorial Highway when plans have been completed therefor, and when said grade is completed that the same be finished with mixed-in-place surface of the type suggested by the mover of this resolution.

Road 23—Tampa South

On motion of Mr. Logan, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to advertise for approximately 10,000 square yards of asphalt block f. o. b. Tampa



Federal Aid, Road 2, Bituminous Concrete

for use on Road 23 south of Tampa, and that the Department do proceed to the grading of said stretch of road.

**Road 23—Hillsborough County
40th Street East to Six-Mile Creek**

On motion of Mr. Logan, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the engineers be authorized to reconstruct that section of State Road 23 in Hillsborough County from 40th Street east to Six Mile Creek, such work to be commenced, however, after the completion of other projects authorized at this meeting.

Road 3—Duval County

On motion of Mr. Hills, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be authorized to widen approximately 1800 feet of State Road 3 from the Country Club north just inside the city limits of Jacksonville, by the addition of rock base surface-treated shoulders.

Emergency Landing Field

Mr. Lupfer, Member of the Department, presented a letter from Mr. I. I. Himes, Chairman of the Board of County Commissioners of Palm Beach County, which outlines an offer made by H. G. Geer and C. C. Chillingworth to donate to the State 100 acres of land in Township 43 South, Range 38 East or Township 44 South, Range 38 East, on the north side of the Cross-State Canal, to be used as an "Emergency Aviation Field."

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that this Department do accept the offer of emergency landing field in Palm Beach County as tendered through the Chairman of the Board of County Commissioners of said county, subject to the clearing of the title to same before conveyance to the state.

Project 974—Road 29

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the engineers of this Department be authorized to revise and reconstruct the crossing of the East Coast Railway on Project 974-A between Holopaw and Illahaw, at an approximate cost of \$4,005.33.

Project 1013—Road 25

On motion of Mr. Lupfer, seconded by Mr. Shands, the following resolution was adopted:

BE IT RESOLVED, that the Chairman be and he is hereby authorized to advertise for bids for the construction of three bridges on Project 1013, Road 25, Palm Beach County.

Memorial Highway Bridge at Palatka

Judge J. V. Walton and Messrs. C. E. Curry, H. S. McKenzie and John Campbell took up with the members the matter of leasing of the Memorial Highway Bridge at Palatka on Roads 3 and 14 to the State Road Department. No formal action was taken but it was understood that the matter would be referred in detail to the Chairman and Attorney for the Department for investigation and report on the legal and financial phases of the proposition.

Purchasing Department

On motion of Mr. Shands, seconded by Mr. Hills, the following resolution was adopted:

BE IT RESOLVED, that there be and there is hereby allocated and appropriated to the Purchasing Department the sum of \$590.00, being this Department's proportionate share of the expenses of said Department; and

BE IT FURTHER RESOLVED, that there be and there is hereby allocated to said Department each month for maintenance the sum of \$90.00.

On motion of Mr. Shands, seconded by Mr. Hills, the Department was adjourned, subject to call by the Chairman.

In Memoriam

Mathew Perry Philips

JUST as we go to press, we learn with profound sorrow of the untimely death of Mathew Perry Philips, Division Engineer for the Fourth Division North, comprising the counties of Clay, Duval, Flagler, Nassau, Putnam, St. Johns and Volusia. His death, which was the result of an automobile accident suffered on May 26th, comes as a distinct shock to his host of friends throughout the State.

Mr. Philips first became connected with the State Road Department in 1919, and except for a lapse of a few years, he had been continuously in its employ ever since. He worked his way up through various engineering positions with the Department until he became a Division Engineer. He was a son of Judge Henry B. Philips, who was Chairman of the Department from 1921 to 1925.

Quiet, modest and unassuming, Mr. Philips brought to his work a loyal, conscientious devotion which marked him as one of the most prominent and valuable of the State Road Department's officials.

Florida Highways joins with every member, official and employee of the State Road Department in extending to the family, sincere and heartfelt sympathy.



Road 4, Rock Base Slag Surface Treated

Need Two Trains of Materials for Mile of Concrete

By E. E. Duffy

TO build a mile of concrete pavement 20 feet wide, more than 4,500 tons of material must be mixed together and molded into the pavement strip. The equivalent of two trains of more than 50 cars each are required to move this material.

Although large paving mixers capable of turning out a cubic yard of fresh concrete every minute generally are used, the building of hard surfaced roads requires a surprisingly large amount of hand labor. Road builders assert that in the end almost the same proportion of money goes to labor in constructing concrete pavements as to labor in building low type roads entirely by hand.

The production of a concrete pavement not only begins in the quarries and cement mills, but also in the factories where equipment and supplies must be fabricated. Paving mixers, cranes, trucks, railroad cars, cement kilns, explosives, sacks and a thousand and one things must be provided to bring the concrete pavement into being.

Cement is scientifically made from rocks containing certain minerals and the manufacturing process is so exact that some 80 operations requiring considerable hand labor are necessary. To get the raw materials for the cement used in a mile of concrete road an average of 400 pounds of dynamite must be exploded in the quarries. After the materials have been carefully assembled 340 tons of coal, or its

equivalent in oil or gas, must be burned to obtain the 650 tons of cement needed for a mile of pavement.

The production of sand and gravel, or crushed stone, also necessitates extensive use of labor. A little less than 3,865 tons, or about 90 carloads of these aggregates are needed for a mile of concrete. By weight, about five and one-half times as much aggregate as cement is used per mile.

Another item of importance to labor is the movement of all the materials and equipment to the scene of operations.

The placement of concrete is of such a nature that a large force of men is required for each paving mixer, usually upwards of 35. Subgrades must be prepared, some 5,000 feet of concrete forms must be continuously installed and removed, water must be supplied, the freshly placed concrete must be made as level as a floor, and it must be properly cured. This latter operation often requires the use of more than 200,000 gallons of water per mile, in addition to the 80,000 gallons used in mixing the concrete.

Recently the U. S. Bureau of Public Roads made public the results of a survey which showed that 91 per cent of the money given to contractors to build concrete pavement quite promptly finds its way into the pockets of workmen.

Public Works Program Will Employ Many Men

APPROPRIATIONS necessary to employ a given number of men for a year on road building may be estimated from the employment records of 1931 on federal-aid highways as \$1,000,000 for each 3,000 men laboring directly on the highways, states T. H. Cutler, president of the American Road Builders' Association.

"The figures on which this estimate is based were presented before a committee of Congress by the American Association of State Highway Officials, and they were derived from reports of actual expenditures and men at work," declared Mr. Cutler. "In 1931, about a billion dollars was expended on state roads and the average direct employment was 270,891 men per month.

"It is a commonly accepted figure that two men are employed in the preparation of materials, transportation and similar activities occasioned by highway work in progress for each man laboring directly on the roads.

"To employ 1,000 men three months on grading work on roads, the U. S. Bureau of Public Roads estimates the following program:

Teams and scrapers—1,000,000 cubic yards costing \$185,000 to \$315,000.

Power shovels served by trucks and teams—1,400,000 cubic yards costing \$445,000 to \$650,000. This material is hauled long distances, which costs more money.

Other forms of construction than road and street building employ many men, but it is doubtful if any public construction work is as widespread and

affects the laboring man more than highway work," continued Mr. Cutler. "On grading for roads, a large part of the money goes for labor, employing from 2,000 to 5,000 men for each million dollars expended. In the construction of pavements, from 80 to 90 per cent is paid directly or indirectly for labor.

"Proposed public works programs now before federal, state, county and city governments provide an effective means of reducing the number of idle men and bringing about needed public improvements at a time when the dollar will buy as much as 50 per cent more than it would two years ago. Spending \$100,000 for public works will provide employment for 300,000 men full time on the roads and 600,000 men part time in quarries, machine shops and on the railroads—nearly a million employed," he concluded.

Prize Alibi

"Don't you work in my motor plant?"

"Yes, boss."

"Didn't I tell you to make a garden?"

"There it is, boss. I'm raising goldenrod for tires."

—The Louisville Courier.

Teacher: "Son, tell the class something about Lindberg's great feat."

Small Boy: "I never saw them but I can tell about Charlie Chaplin's."

Centralization Cure for Road Ills, Says T. H. MacDonald

A DEFINITE POLICY of centralization in the administration of local roads was advocated by Thomas H. MacDonald, chief U. S. Bureau of Public Roads, speaking at the annual convention of the Association of Highway Officials of the North Atlantic States, as a means of meeting the present difficult fiscal situation. Mr. MacDonald, contrasting the increasing demands for highway service with the widespread complaints against taxation, discussed the financial positions of state highway systems by groups of states in terms of their policies in the matter of control of highway income.

1. The states, he said, that have placed the administration of gas-tax and registration-fee revenues wholly under the control of the state highway departments are in the best position to carry forward their state-highway programs and extend assistance to roads not within the state system.

2. The states that have not given direct expenditure of all the income from these sources to the state highway departments, but that nevertheless have provided a control of the portion allocated to other governmental divisions, are able to meet their state-road obligations and are obtaining the co-ordination of state and local improvement of roads.

3. The states that have divided income with other agencies without state control, he stated, are almost without exception facing serious financial difficulties on the part of both state and localities, in maintaining existing roads and proceeding with even greatly reduced highway-development programs.

Among the evils of local-road administration enumerated by Mr. MacDonald were the following: a multiplicity of small administrative boards with taxing and spending powers, election of officials, use of day-labor or force-account methods, lack of budgeting and planning, lack of engineering, purchasing in small amounts, duplication and inefficient use of equipment, lack of continuous maintenance and insufficient funds for efficient operation. There are many counties whose present assessed valuations are far below the amount legally required to support the outstanding bonds.

The remedy for such evils is, according to Mr. MacDonald, greater centralization of administrative authority, especially in the case of the strictly rural counties and townships. The states may be divided into two groups:

1. Those that are small in area and those in which county or town government is essentially rural in character. In these states it is advocated that the state highway departments have complete jurisdiction over all roads.

2. Those that are large in area and in which county government is well developed and that contain a number of metropolitan areas. In these states the county should be, the smallest unit of road administration. There is no good reason, he stated, for the large states to take over all road administration at the present time; in such states the state highway department should occupy a position analogous to that of the federal government in its relations with the state highway departments.

Where counties are unable to maintain adequate engineering forces, grouping into districts will be necessary. Mr. MacDonald recommended, however, that there be set up for such counties a district under the direct jurisdiction of the state highway department, administered through staff engineers of the state department. Thus, with the exception of metropolitan counties which are efficiently organized to carry out local-road maintenance and betterment, local roads will be under the direction of the state highway departments.

In the financing of the public roads, Mr. MacDonald stated, the state highway systems should have the first claim on the income derived from the gasoline tax and license fees; the remainder may be used as state aid for the secondary system under direct or general state control, and for the construction and reconstruction of state highway routes through cities. He likened the state highway systems to a vast public utility, the earning power of which must not be destroyed through reduction of funds.

—Better Roads.

Truck Great Factor In Farm Freighting

MOTOR trucks are hauling approximately 15 per cent of the total shipments of fresh fruits and vegetables transported 20 or more miles to market, according to a survey made recently by the Bureau of Agricultural Economics. Motor-truck shipments of 20 or more miles in 1929 are estimated by the bureau at between 150,000 and 200,000 cars, as compared with 1,068,745 cars transported by rail and boat lines. This represents a large percentage increase in motor-truck hauls in recent years, but it is pointed out that rail and boat shipments have practically doubled in the last 10 years. On a mile-age basis the percentage of motor trucks to total shipments is much less than 15 per cent because of the longer average haul by railroads.

In areas covered by the survey motor-truck hauls ranged from 2 to 92 per cent of the shipments which

went 20 or more miles in those areas in 1928, the high figure being for the State of Connecticut. In Southwestern Michigan 73 per cent of the shipments going 20 or more miles to market go by motor truck; on Long Island, 68 per cent; in the Hudson Valley, 67 per cent; central and southern New Jersey, 67 per cent; Delaware, 41 per cent; southern Indiana, 37 per cent; eastern shore of Maryland, 24 per cent; western Maryland, 24 per cent; southern Illinois, 21 per cent; western New York, 19 per cent; south central Pennsylvania, 18 per cent; western Massachusetts, 7 per cent; eastern shore of Virginia, 3 per cent; and the West Virginia, Cumberland, Shenandoah Valley region, 2 per cent. Motor-truck hauls in these areas totaled 77,102 cars, as against 136,509 cars carried by rail and boat. In important producing areas remote from large markets—Florida,

southern Texas, California, the Northwestern States, and northern Maine—the percentage of shipments hauled by motor truck is much smaller than in some of the areas covered by the survey.

The bureau investigated truck receipts at city markets and trade and operating practices of truckmen, farmers, truckmen carriers, and truckmen merchants, and studied the economic aspects of shipping by truck in their effect upon distribution and production.

The following is a summary of some of the information brought out by the survey:

Trucks have expedited transportation on short hauls and have made the distribution of highly perishable products more direct and less wasteful under certain conditions.

Regional motor-truck jobbing markets, where products from a considerable area are concentrated and redistributed, and wholesale roadside stands, are increasing in number to serve the motor-truck trade.

Products most suited to long-distance transportation by motor truck are the light, quickly perishable fruits and vegetables or those that yield a high freight revenue and require expeditious movement to market.

Distances covered by trucks have increased; highly perishable products are now being hauled regularly for distances as great as 400 miles, and even greater distances in some areas.

For all the areas in north central and northeastern United States that were studied the relation which motor-truck shipments of important commodities bore to the total shipments was, in terms of percentage: Spinach, 96; snap beans, 89; mush-

rooms, 85; asparagus, 76; tomatoes, 64; strawberries, 58; cantaloupes, 49; grapes, 48; peaches, 43; potatoes, 25; apples, 24; lettuce, 21; sweet potatoes, 19; onions, 18; and cabbage, 12.

The truck unloads of fruits and vegetables at the 11 cities studied, excluding market-garden receipts, were of greatest relative importance at Los Angeles where they were 57 per cent of the total of unloads for the city, and of least relative importance at Boston, where they were only 2 per cent of the total unloads.

Redistribution from city markets to surrounding trade territories has grown in volume and in distance. Except for local supplies, the area within 50 miles is now usually supplied with fruits and vegetables by truck from the large city market. In the outer rim of the trade territory, up to 150 miles, and sometimes farther, trucks compete with mixed cars and express shipments from the large city and with straight cars shipped direct from producing areas.

It was estimated that 50 per cent of the total receipts on the wholesale markets at Pittsburgh was trucked out of the metropolitan area in the spring of 1930, and at Baltimore 24 per cent was trucked out.

Country cold-storage plants aid motor-truck transportation by prolonging the trucking season. The use of the truck facilitates quick movement of apples into storage after packing, which is a decided advantage. Canning-plant managers are using trucks to obtain more soft fruits and tomatoes of desirable maturity and to extend the area from which supplies are received.

—Public Roads

Dad: "Did you have the car out last night?"

Son: "Yes, Dad, I took some of the boys to ride."

Dad: "Well, tell them I found two of their lipsticks."

He: "I got a real kick out of kissing Ann last night."

She: "Any more than usual?"

He: "Yeh, her fiance saw me."

"I hear that you and your wife are quarreling again."

"Who told you?"

"I hear it I say, I live only a block away."

Big Business: Tie Up a Dozen

"Are you engaged to Bob?"

"Yes, I have promised to marry him as soon as he has made his fortune."

"That isn't an engagement, that's an option."

"What is the matter with Lula's mouth?"

"She tried to rouge her lips with a lighted cigarette this morning."

A Dead Heat

There was a young man from Des Plaines

Who had a new car but no brains,

He raced with the trolley

And tied it, by golly—

Now he lies on a cot, full of pains.

—Safe Driver.

Status of Bridge Construction

Through April 30, 1932

Project No.	Contractor	Road No.	County	Total Length Feet	Type	Percent Complete
57	C. G. Kershaw Contr. Co.	3	Nasau-Duval	1067.00	Concrete	20.00
66	R. C. Huffman Const. Co.	5	Sarasota	458.57	Concrete & Steel Span	99.9
72-D	Powell Bros.	28	Putnam-Flagler	313.00	Concrete	14.00
718-B	John Johnson	5-A	Alachua-Columbia	216.00	Concrete	25.00
779-B	R. J. Arrington & Son	19	Leon-Liberty	731.00	Timber & Concrete	66.00
805	J. D. F. Boggs	25	Hendry	351.00	Concrete	0.00
819-B	Penton-Mathis Const. Co.	54	Okaloosa	3087.00	Timber	2.00
875-B	C. T. Felix	2	Sumter	700.00	Timber & Concrete	14.00
977-B	Paul Gilmore	32	Hardee	217.00	Concrete	0.00

Status of Road Construction

Through April 30, 1932

Proj. No.	Contractor	Road No.	County	Total Length Miles	Clearing Miles	Grading Miles	Base Miles	Surface Miles	Type	Per Cent Complete
3-A	McVay Lindsay & Son	218	Okaloosa	9.17	9.17	9.17			S.T.S.C.	65.00
53-D	Coastal Roads Co.	2	Lake	4.83			0.00	0.00	Bit. Conc.	0.00
60-A	Convicts	4	Flagler-Volusia	11.76	11.76	10.28			Grading	75.00
79-A	Convicts	4	Duval	13.31	9.98	8.52			Grading	70.00
83	E. F. Powers Const. Co.	5	Sarasota	9.20			9.20	9.20	R.B.S.T.	97.00
623	State Forces	35	Madison	12.13				4.00	R.B.S.T.	90.00
695-C	Coastal Roads Co.	2	Lake	2.33			0.00	0.00	Bit. Conc.	0.00
702	Convicts	10	Franklin	7.50	7.00	5.00			Grading	88.00
706-B	State Forces	28	Putnam	14.91				6.00	R.B.S.T.	92.00
737	Convicts	39	Washington	11.00	6.00	3.00			Grading	25.00
779	Convicts	19	Liberty	8.00	8.00	7.84			Grading	98.00
788	State Forces	10	Walton	17.00				7.00	Sand Asph.	41.00
793-C	Convicts	15	Citrus	6.45	4.84	1.00			Grading	35.00
793-D	Convicts	15	Citrus	7.99	7.68	7.68			Grading	95.00
796	Convicts	13	Nassau	10.10	3.00	1.50			Grading	18.00
797	Convicts	13	Nassau	9.60	9.60	9.60			Grading	100.00
805	Convicts	25	Hendry	9.51	9.51	9.51			Grading	98.00
806-C	State Forces	25	Hendry	11.00				6.50	R.B.S.T.	95.00
806-D	State Forces	25	Hendry	12.69				7.00	R.B.S.T.	95.00
826	Convicts	88	Holmes	10.00	7.50	4.00			Grading	38.00
832	State Forces	10	Santa Rosa	16.01				4.50	Sand asph.	30.00
834	Convicts	52	Jackson	16.04	8.00	7.00			Grading	45.00
868-A	State Forces	5	Levy	7.34				3.00	R.B.S.T.	90.00
868-C	State Forces	5	Levy	12.71				5.00	R.B.S.T.	88.00
873	Raiford Convicts	49	Baker	10.78	6.47	4.31			Grading	40.00
875	Convicts	23	Hernando	10.14	10.14	9.92			Grading	98.00
876-C	State Forces	78	Duval	19.17				11.50	R.B.S.T.	96.00
902	Convicts	70	Sumter	12.33	11.84	4.31			Grading	54.00
947	Convicts	80	Clay	6.85	6.85	5.82			Grading	80.00
948	McVay Lindsay & Son	22	Orange	11.90			0.00	0.00	R.B.S.T.	0.00
956	Convicts	44	Volusia	5.04	5.04	3.07			Grading	64.00
960	Wilson & Walter	67	Glades	6.19	.75	.40			Grading	4.00
974-C	Convicts	29	Osceola	18.10	18.10	8.33			Grading	55.00
977-A	Convicts	22	Hardee	6.04	5.81	2.94			Grading	42.00
994	Convicts	109	Martin	10.50	9.45	0.00			Grading	20.00
1013	Convicts	25	Palm Beach	3.60	3.60	2.73			Grading	78.00
1035	State Forces	218	Bay	4.00	4.00	4.00		4.00	Sand Asph.	98.00
Total Complete March 31, 1932						3425.58	3345.49	1956.32	2961.73	
Complete month of April, 1932						21.81	22.59		8.70	
Total Complete April 30, 1932						3447.39	3368.08	1956.32	2970.43	
TOTAL MILEAGE COMPLETE										
			Concrete	Brick	B.C.	S.A.	B.M.	Asp.B.	S.T.R.B.	S.T.S.C. Macasph.
Complete to March 31, 1932				438.05	21.63	54.26	114.61	109.57	23.70	1636.25 362.52 16.99
Complete month of April, 1932									.55 3.96	
Complete to April 30, 1932				438.05	21.63	54.26	114.61	109.57	23.70 1636.80 366.48	16.99
			Sand Asph.	Sand Clay	Marl	Total				
Complete to March 31, 1932				94.94	101.37	27.58	3005.74			
Complete month of April, 1932				5.12			5.96			
Complete to April 30, 1932				100.06	101.37	27.58	3011.10			

CONTRACTS AWARDED BY STATE ROAD DEPARTMENT

January 1, 1932 to May 31, 1932

STATE PROJECTS

Proj. Road	County	Contractor	Length Feet	Length Miles	Contract + 10%	Type
718-B	5-A	Alachua-Columbia	John Johnson	216	\$ 24,292.45	Concrete
819-B	54	Okaloosa	Penton-Mathis Const. Co.	3087	95,964.54	Timber
695-C	2	Lake	Coastal Roads Co.		63,599.40	Bit. Conc.
960	67	Glades	Wilson & Walters		36,695.02	Grade
977-B	32	Hardee	Paul Gilmore	217	18,867.94	Concrete
805	25	Hendry	J. D. F. Boggs	351	22,002.39	Concrete
1090	169	Duval	Duval Engr. & Contr. Co.		14,883.29	R.B.S.T.
1002	140	Broward	Everglades Const. Co.		32,445.98	R.B.S.T.
870	143	Palm Beach	Coastal Roads Co.		26,348.30	R.B.S.T.
785	47	St. Johns	T. B. Gillespie, Inc.		42,460.00	M.I.P. Tar
562-C	8	Highlands	Manly Construction Co.		216,445.26	R.B.S.T.
757	2	Polk	Rutherford Const. Co.		296,374.92	Macasph.
758	2	Polk	Jno. E. Ballenger Const. Co.		221,125.85	Macasph.
1024	47	Duval	Duval Engr. & Contr. Co.		280,426.41	
1097	4	Duval	Duval Engr. & Contr. Co.		108,328.79	
Sub Total			3871	63.50	\$1,500,260.54	

FEDERAL PROJECTS

Proj. Road	County	Contractor	Length Feet	Length Miles	Contract + 10%	Type
72-D	28	Putnam-Flagler	Powell Brothers	313	\$ 37,131.79	Concrete
53-D	2	Lake	Coastal Roads Co.		149,749.01	Bit. Conc.
79-B	4	Duval	Hillyer & Reynolds	181	19,366.66	Concrete
87-A	19	Jefferson	Van Gordon Const. Co.		159,858.90	R.B.S.T.
85	3	Seminole-Volusia	Langston & Murphy Const. Co.		287,325.80	C.G.&G.
Sub Total			494	16.16	\$ 653,432.16	
Grand Total			4,365	79.66	\$2,153,692.70	